

Application No. 10/665,100  
Amendment dated April 26, 2005  
Reply to Final Office Action of February 1, 2005

Docket No. 1 32-5157

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-23 (CANCELLED):

24 (NEW): A position determination method of determining positions of a plurality of regions on an object, said method comprising:

a detection step of detecting an image of a mark on each of the plurality of regions on the object to generate image data;

a processing step of processing the image data with each of a plurality of signal processing methods, with respect to each of positions of the marks, to obtain a position of the mark in the image data with respect to each of the plurality of signal processing methods;

an obtaining step of obtaining an expression approximately representing the positions of the plurality of regions with respect to each set of the obtained positions, each of the obtained positions being obtained with one of the plurality of signal processing methods in said processing step;

an evaluation step of evaluating approximation degrees of the expressions obtained in said obtaining step; and

a selection step of selecting one of the plurality of signal processing methods with respect to each of positions of the marks based on evaluation results in said evaluation step.

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25 (NEW): A method according to claim 24, wherein said evaluation step includes calculating difference between a position of the mark, obtained in said signal processing step, used for obtaining the expression and a position of the mark obtained by the expression.

26 (NEW): A method according to claim 24, wherein the plurality of signal processing methods are a plurality of template matching methods of which templates are different from each other.

27 (NEW): A method according to claim 24, wherein the plurality of signal processing methods are a plurality of template matching methods of which window widths to be set on the image data are different from each other.

28 (NEW): A method according to claim 24, wherein the plurality of signal processing methods calculate a plurality of local maximum slope positions different from each other, respectively.

29 (NEW): A method according to claim 24, wherein said selection step selects one of the plurality of signal processing methods with respect to each of the plurality of regions.

30 (NEW): A method according to claim 24, wherein said selection step selects one of the plurality of signal processing methods with respect to each of the marks.

31 (NEW): A position determination apparatus for determining positions of a plurality of regions on an object, said apparatus comprising:

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a detection system which detects an image of a mark on each of the plurality of regions on the object to generate image data;

a first processing unit to process the image data with each of a plurality of signal processing methods, with respect to each of positions of the marks, to obtain a position of the mark in the image data with respect to each of the plurality of signal processing methods; and

a second processing unit to obtain an expression approximately representing the positions of the plurality of regions with respect to each set of the obtained positions, each of the obtained positions being obtained with one of the plurality of signal processing methods, to evaluate approximation degrees of the expressions, and to select one of the plurality of signal processing methods with respect to each of positions of the marks based on the evaluation results.

32 (NEW): An apparatus according to claim 31, wherein said second processing unit evaluates the approximation degree by calculating difference between a position of the mark, obtained by said first processing unit, used for obtaining the expression and a position of the mark obtained by the expression.

33 (NEW): An apparatus according to claim 31, wherein the plurality of signal processing methods are template matching methods of which templates are different from each other.

34 (NEW): An apparatus according to claim 31, wherein the plurality of signal processing methods are template matching methods of which window widths to be set on the image data are different from each other.

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35 (NEW): An apparatus according to claim 31, wherein the plurality of signal processing methods calculate a plurality of local maximum slope positions different from each other, respectively.

36 (NEW): An exposure apparatus for exposing a plurality of regions on an object to a pattern, said apparatus comprising:  
a position determination apparatus, for determining positions of the plurality of regions on the object, as defined in claim 31.

37 (NEW): A method of manufacturing a device, said method comprising steps of:  
exposing a plurality of regions on an object to a pattern using an exposure apparatus as defined in claim 36;  
developing the exposed object; and  
processing the developed object to manufacture the device.